Volume 2: Appendices

Appendix by Chapter

POTENTIAL FUTURE STRATEGIES

Several potential planning and policy initiatives were identified that may be incorporated into future updates of the Plan. These strategies include public transit, bicycle and pedestrian, travel demand management, goods movement, intersection configuration, access management, safety improvements, and infrastructure maintenance. Goods movement is of particular importance since projections of significant increases in square footage of industrial development within the district will result in increased amounts of freight traffic on roadways, railways and through local ports.

CONCLUSION

This Transportation Plan is designed to be a fluid document and will be revised over time as the Transportation Planning District's needs change. As such, the NJMC intends to periodically update the Plan to reflect changes in variables such as new development, committed transportation projects, cost escalation over time, and the extent of credits, exemptions, and waivers. In this manner, the NJMC will maintain a fair and equitable program for financing improvement projects that will ensure an efficient and safe transportation system in order to sustain future economic development in the Meadowlands District.

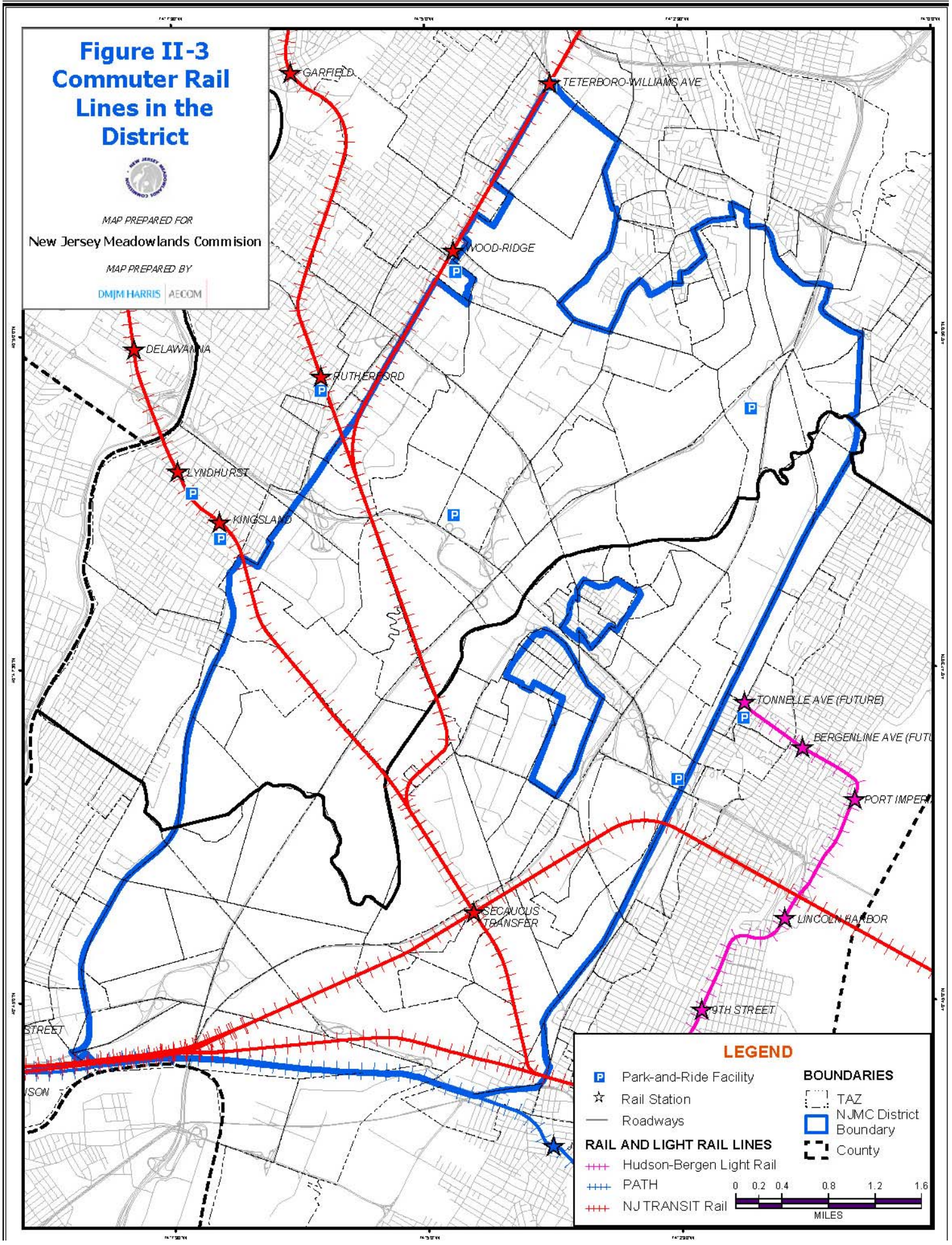


Figure II-3
Commuter Rail Lines in the District
MAP PREPARED FOR
New Jersey Meadowlands Commision
MAP PREPARED BY
DMJM HARRIS | AECOM
GARFIELD
TETERBORO-WILLIAMS AVE
WOOD-RIDGE
DELAWANNA
RUTHERFORD
LYNDHURST
KINGSLAND
TONNELLE AVE (FUTURE)
BERGENLINE AVE (FUTU
PORT IMPERI
SECAUCUS TRANSFER
LINCOLN HARBOR
9TH STREET
LEGEND
Park-and-Ride Facility
Rail Station
Roadways
RAIL AND LIGHT RAIL LINES
Hudson-Bergen Light Rail
PATH
NJ TRANSIT Rail
BOUNDARIES
TAZ
NJMC District Boundary
County
0 0.2 0.4 0.8 1.2 1.6
MILES

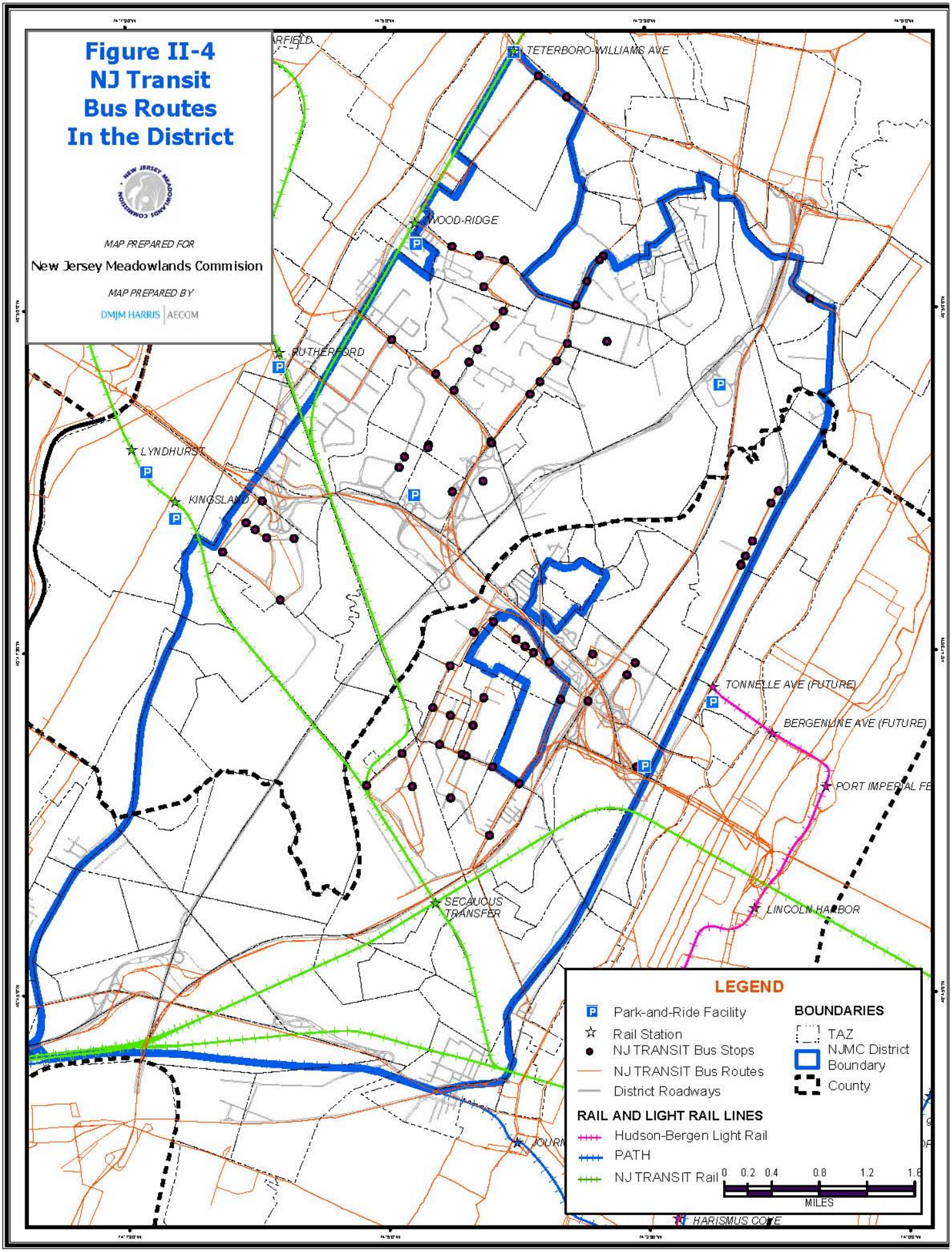


Figure II-4
NJ Transit
Bus Routes
In the District
MAP PREPARED FOR
New Jersey Meadowlands Commision
MAP PREPARED BY
DMJM HARRIS | AECOM
TETERBORO-WILLIAMS AVE
WOOD-RIDGE
RUTHERFORD
LYNDHURST
KINGSLAND
TONNELLE AVE (FUTURE)
BERGENLINE AVE (FUTURE)
PORT IMPERIAL FE
SECAUCUS TRANSFER
LINCOLN HARBOR
HARISMUS COVE
LEGEND
Park-and-Ride Facility
Rail Station
NJ TRANSIT Bus Stops
NJ TRANSIT Bus Routes
District Roadways
RAIL AND LIGHT RAIL LINES
Hudson-Bergen Light Rail
PATH
NJ TRANSIT Rail
BOUNDARIES
TAZ
NJMC District Boundary
County
0 0.2 0.4 0.8 1.2 1.6
MILES

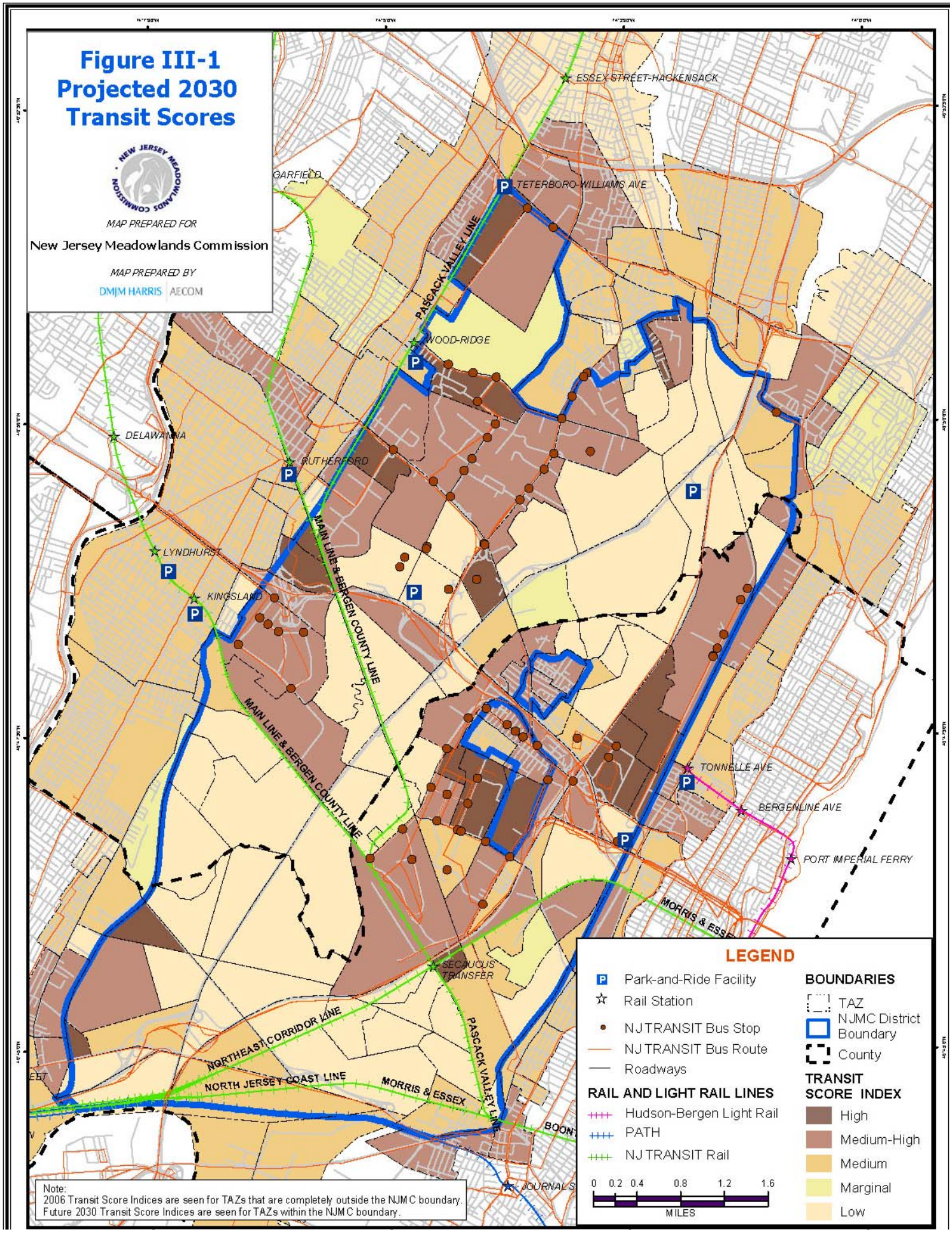


Figure III-1
Projected 2030
Transit Scores
MAP PREPARED FOR
New Jersey Meadowlands Commission
MAP PREPARED BY
DMJM HARRIS | AECOM
ESSEX STREET-HACKENSACK
GARFIELD
TETERBORO-WILLIAMS AVE
PASCACK VALLEY LINE
WOOD-RIDGE
DELAWANNA
RUTHERFORD
LYNDHURST
KINGSLAND
MAIN LINE & BERGEN COUNTY LINE
MAIN LINE & BERGEN COUNTY LINE
TONNELLE AVE
BERGENLINE AVE
PORT IMPERIAL FERRY
SECAUCUS TRANSFER
NORTHEAST CORRIDOR LINE
NORTH JERSEY COAST LINE
MORRIS & ESSEX
PASCACK VALLEY LINE
JOURNAL S
LEGEND
Park-and-Ride Facility
Rail Station
NJ TRANSIT Bus Stop
NJ TRANSIT Bus Route
Roadways
RAIL AND LIGHT RAIL LINES
Hudson-Bergen Light Rail
PATH
NJ TRANSIT Rail
BOUNDARIES
TAZ
NJMC District Boundary
County
TRANSIT SCORE INDEX
High
Medium-High
Medium
Marginal
Low
0 0.2 0.4 0.8 1.2 1.6
MILES
Note:
2006 Transit Score Indices are seen for TAZs that are completely outside the NJMC boundary.
Future 2030 Transit Score Indices are seen for TAZs within the NJMC boundary.

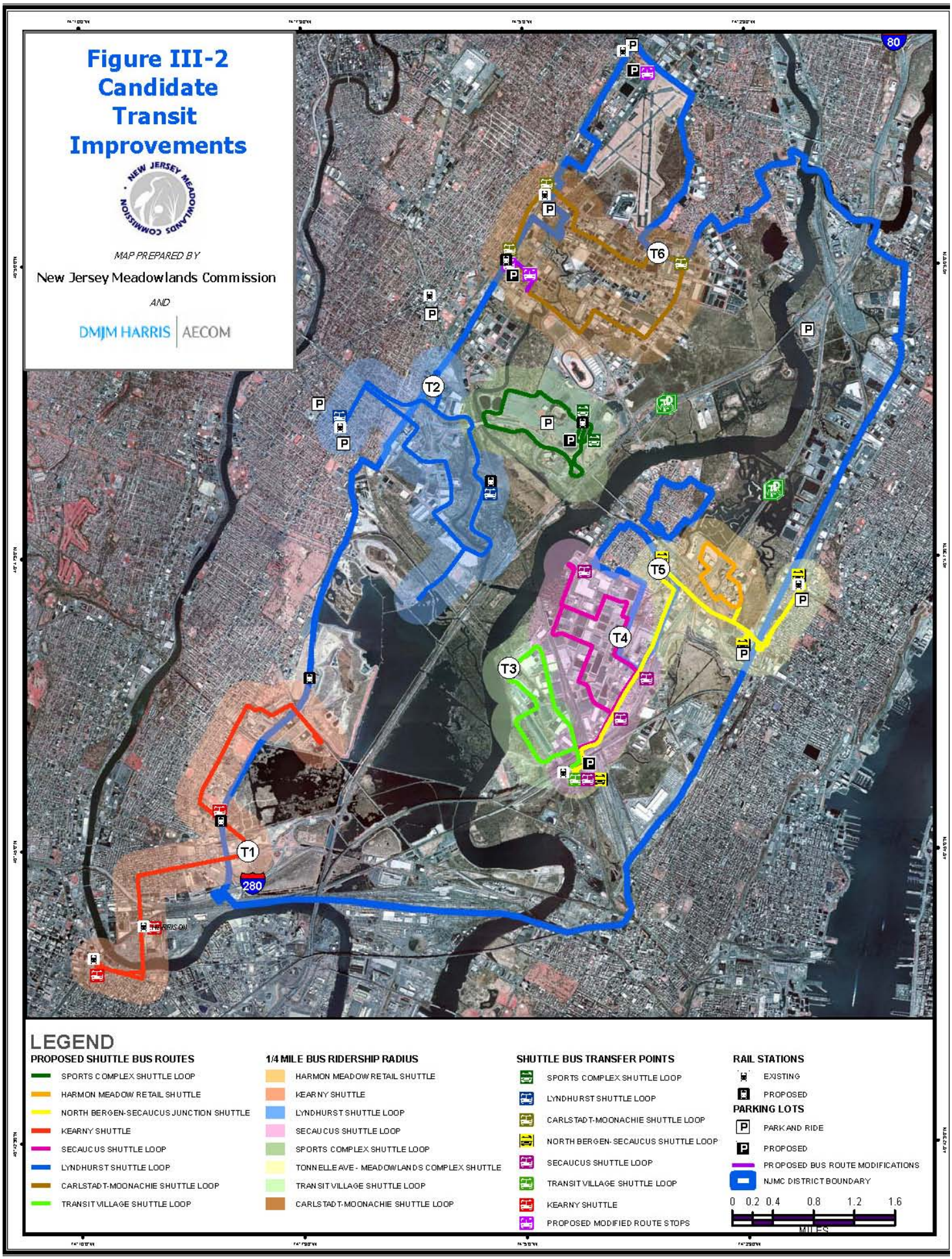


Figure III-2
Candidate
Transit
Improvements
NEW JERSEY MEADOWLANDS COMMISSION
MAP PREPARED BY
New Jersey Meadowlands Commission
AND
DMJM HARRIS | AECOM
80
T1
T2
T3
T4
T5
T6
280
HARRISON
LEGEND
PROPOSED SHUTTLE BUS ROUTES
SPORTS COMPLEX SHUTTLE LOOP
HARMON MEADOW RETAIL SHUTTLE
NORTH BERGEN-SECAUCUS JUNCTION SHUTTLE
KEARNY SHUTTLE
SECAUCUS SHUTTLE LOOP
LYNDHURST SHUTTLE LOOP
CARLSTADT-MOONACHIE SHUTTLE LOOP
TRANSIT VILLAGE SHUTTLE LOOP
1/4 MILE BUS RIDERSHIP RADIUS
HARMON MEADOW RETAIL SHUTTLE
KEARNY SHUTTLE
LYNDHURST SHUTTLE LOOP
SECAUCUS SHUTTLE LOOP
SPORTS COMPLEX SHUTTLE LOOP
TONNELLE AVE - MEADOWLANDS COMPLEX SHUTTLE
TRANSIT VILLAGE SHUTTLE LOOP
CARLSTADT-MOONACHIE SHUTTLE LOOP
SHUTTLE BUS TRANSFER POINTS
SPORTS COMPLEX SHUTTLE LOOP
LYNDHURST SHUTTLE LOOP
CARLSTADT-MOONACHIE SHUTTLE LOOP
NORTH BERGEN-SECAUCUS SHUTTLE LOOP
SECAUCUS SHUTTLE LOOP
TRANSIT VILLAGE SHUTTLE LOOP
KEARNY SHUTTLE
PROPOSED MODIFIED ROUTE STOPS
RAIL STATIONS
EXISTING
PROPOSED
PARKING LOTS
PARK AND RIDE
PROPOSED
PROPOSED BUS ROUTE MODIFICATIONS
NJMC DISTRICT BOUNDARY
0 0.2 0.4 0.8 1.2 1.6
MILES


Figure III-3
Candidate
Roadway Segment
Improvements
MAP PREPARED FOR
New Jersey Meadowlands Commission
MAP PREPARED BY
DMJM HARRIS | AECOM
80
280
L1
L2
L3
L4
L5
L6
L6
L6
L6
L6
L7
L8
L9
L10
L11
L12
L13
L14
L15
L16
LEGEND
Intersection Improvements as part of Roadway Segment Improvements
Roadway Segment Improvements
District Roadways
NJMC District Boundary
0.30.15 0 0.3 0.6
MILES


Figure III-4
Candidate Roadway Interchange Improvements
MAP PREPARED FOR
New Jersey Meadowlands Commission
MAP PREPARED BY
DMJM HARRIS | AECOM
X1
X2
X3
X4
X5
X6
X7
X8
LEGEND
Additional Lane on Mainline or Ramp
Acceleration Lane/ Deceleration Lane Improvements
Grade Seperated Ramp Movements
District Roadways
NJMC District Boundary
0 0.2 0.4 0.8 1.2
MILES


Figure III-5
Candidate Roadway Intersection Improvements
MAP PREPARED FOR
New Jersey Meadowlands Commission
MAP PREPARED BY
DMJM HARRIS | AECOM
I1
I2
I3
I4
I5
I6
I7
I8
I9
I10
I11
I12
I13
I14
I15
I16
I17
I18
I19
I20
80
17
3
7
280
95
LEGEND
Grade Seperated
Additional storage lanes
New signal
New signal and additional storage lanes
Signal phasing/timing modifications
Additional storage lanes & signal phasing/timing modifications
District Roadways
NJMC District Boundary
0 0.2 0.4 0.8 1.2
MILES

Table III-7: Candidate Pedestrian Improvements

Node #	Node Name	Need Category*	Total Crosswalks Needed	Total Feet of Sidewalks Needed
P-1	Valley Brook Avenue	Development/ Transit	9	8.559
P-2	Harrison Avenue	Development	0	944
P-3	Westside Avenue	Development	15	14,542
P-4	Paterson Plank Road	Development	24	11,414
P-5	New County Road/New County Road Extension	Transit	6	8,209
P-6	Moonachie Avenue	Transit	18	1,674
		TOTAL :	**72**	**45,342**

*Indicates whether the pedestrian need is based on the need for connectivity between centers of development, to provide access to transit services, or both.

E. BICYCLE

The final transportation network component for analysis was the bicycle route system. As Chapter II describes, the District currently has only one designated bicycle route, although it also has two major greenway/trail routes in various stages of completion:

Meadows Path is a pedestrian trail system that currently includes seven miles of trails, including the Valley Brook Avenue Greenway, a 1.5 mile pedestrian walkway in Lyndhurst, providing linkage between DeKorte Park and the Meadowlands Corporate Center.

The Secaucus Greenway is a planned 15-mile waterfront greenway on the eastern portion of The District. Significant portions of the Greenway that are completed include trails in the Hudson County Park at Laurel Hill and the 1.5-mile Mill Creek Marsh Trail.

Both Meadows Path and the Secaucus Greenway ~~. These routes~~ provide potential for enhancing bicycling options through improved connectivity to major residential and employment centers and other transportation facilities. For the purposes of this analysis, we have included proposed segments of Meadows Path and the Secaucus Greenway from the NJMC Green Map as part of the recommended bicycle improvements to the District.

2. Candidate Improvements

This section describes the bicycle route improvements necessary to serve each development center that currently does not have a connection with either major path, either directly or indirectly. Bicycle route improvements have been segmented by municipality and labeled by reference numbers B-1 through B-13. Table III-9 and Figure III-7 summarize the identified improvements. Note that segments are already proposed as being part of either

~~*a. Rutherford*~~

~~The portion of Rutherford in~~ the Secaucus Greenway or ~~District and above NJ 3 does not have direct access to the~~ Meadows Path.

a. Carlstadt (B-1)

The central part~~because~~ of Carlstadt within the District does not have access to the proposed portion of Meadows Path, due in part to a large expanse of wetlands~~NJ 3~~. A 1.6-mile ~~connecting~~ bicycle route could follow Washington Avenue~~use Veterans' Boulevard, the NJ 3 service road~~ and Terminal Road and connect with Moonachie Avenue/Empire Boulevard.
~~Wall Street West to reach the Meadows Path (a distance of about one mile).~~

b. East Rutherford (B-2)

The area of East Rutherford in the District, between NJ 17 and the Meadowlands Sports Complex, does not have access to ~~the~~ Meadows Path due to the presence of Berry's Creek, the Meadowlands Sports Complex, and the surrounding roadway system. A 1.5-mile route along Paterson Plank Road would link this development center to a proposed portion of ~~the~~ Meadows Path west of the NJ Turnpike.

~~*b. Carlstadt*~~

~~*c.* The central part of Carlstadt does not have access to the proposed portion of the Meadows Path, due in part to a large expanse of wetlands. A 1.6-mile bicycle~~

~~route could follow Washington Avenue and Terminal Road, connecting with~~ ***Moonachie*** ***(B-7)*** ~~Avenue/Empire Boulevard.~~

~~c.~~ ~~***Moonachie***~~

The Moonachie area, which includes a mix of industrial, commercial, community facilities, and residential development, also is separated from ~~the~~ Meadows Path by a large expanse of wetlands. A 2.2-mile route along Moonachie Avenue would connect this area to a proposed portion of ~~the~~ Meadows Path located east of Horizon Boulevard.

d. Rutherford (B-10)

The portion of Rutherford in the District and north of NJ 3 does not have direct access to the Meadows Path because of NJ 3. A connecting bicycle route could use Veterans' Boulevard, the NJ 3 service road, and Wall Street West to reach Meadows Path in Lyndhurst (a distance of about one mile).

e. Teterboro (B-13)

The Teterboro area is somewhat isolated from trail access, but a 1.7-mile route along Industrial Avenue and Railroad Avenue would connect this center with the Moonachie Avenue bicycle route.

f. Meadows Path (B-4, B-5, B-6, B-8, and B-12)

The extension of Meadows Path that will span the length of the Meadowlands District from Little Ferry to Kearny includes all of the candidate improvements in the above referenced areas. The construction of this pathway would link existing parks, wilderness areas, and cultural resources throughout nine of the fourteen District municipalities via a single bicycle/pedestrian network west of the Hackensack River. Nearly 7.5 miles of Meadows Path are in place. Most of the miles lie within the boundaries of Richard W. DeKorte Park and the nearby Meadowlands Corporate Center in Lyndhurst. The Saw Mill Creek Trail, a one-mile section connecting DeKorte Park with the 1E Landfill, was completed in the summer of 2001.

g. Secaucus Greenway (B-3. B-9, B-11)

The Secaucus Greenway is a proposed 15-mile waterfront greenway on the eastern portion of the District that encompasses all of the candidate improvements within the above referenced areas. If constructed, this greenway would allow public access along the Hackensack River and provide a continuous pedestrian trail linking retail, office, commercial, and adjacent residential areas in Secaucus. Portions of the greenway that have been completed include trails in the Hudson County Park at Laurel Hill and the 1.5-mile Mill Creek Marsh Trail.

Table III-9: Candidate Bicycle Route Improvements

Ref#	Area	Route	Length (Miles)
B-1	Carlstadt	Empire Boulevard/Patterson Plank Road/Washington Avenue/Terminal Road	6.1
B-2	East Rutherford	Murray Hill Parkway/Paralleling Pascack Valley Line	1.6
B-3	Jersey City	West Side Avenue/Paralleling Boonton Line	1.1
B-4	Kearny	Paralleling Harrison-Kingsland Line	1.8
B-5	Little Ferry	Mehrhof Road/Gates Road/Riverside Avenue/Empire Boulevard/Dietrich Street	1.2
B-6	Lyndhurst	Wall Street West/Paralleling NJ Turnpike (West)	1.0
B-7	Moonachie	Empire Boulevard/Moonachie Avenue/Park Avenue/Industrial Avenue	3.0
B-8	North Arlington	Paralleling Harrison-Kingsland Line	1.8
B-9	North Bergen	71st Street/West Side Avenue/Paterson Plank Road/Terminal Road	2.1
B-10	Rutherford	North Node Access Road/ Paralleling NJ Turnpike (West)/Thomas E. Dunn Memorial Highway	2.8
B-11	Secaucus	Fraternity Meadows Development/Meadowland Parkway/Castle Road/New County Road	5.5
B-12	S. Hackensack	Terminal Lane/Off Road Path East of Horizon Boulevard	0.4
B-13	Teterboro	Industrial Avenue/Railroad Street	1.7
		TOTAL	**30.1**

~~Table III-9: Candidate Bicycle Route Improvements~~

~~Ref #~~	~~Area~~	~~Route~~	~~Length~~
~~B-1~~	~~Rutherford~~	~~Veterans' Boulevard/NJ 3 Service Road~~	~~1.0~~
~~B-2~~	~~East Rutherford~~	~~Paterson Plank Road~~	~~1.5~~
~~B-3~~	~~Carlstadt~~	~~Washington Avenue/Terminal Road~~	~~1.6~~
~~B-4~~	~~Moonachie~~	~~Moonachie Avenue/Empire Boulevard~~	~~2.2~~
~~B-5~~	~~Teterboro~~	~~Industrial Avenue/Railroad Street~~	~~1.7~~

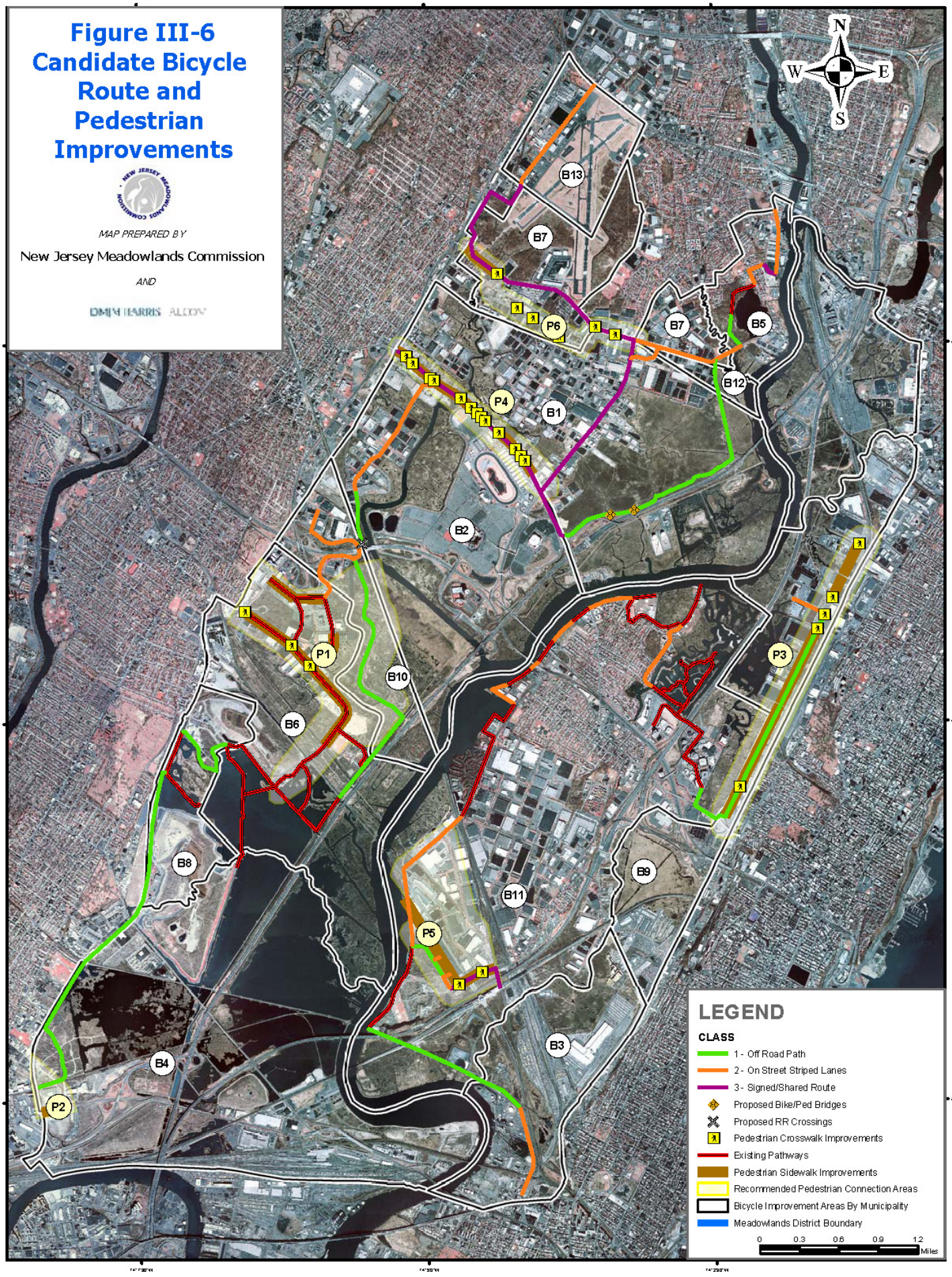
Figure III-6
Candidate Bicycle Route and Pedestrian Improvements

MAP PREPARED BY

New Jersey Meadowlands Commission

AND

DMJM HARRIS AECOM



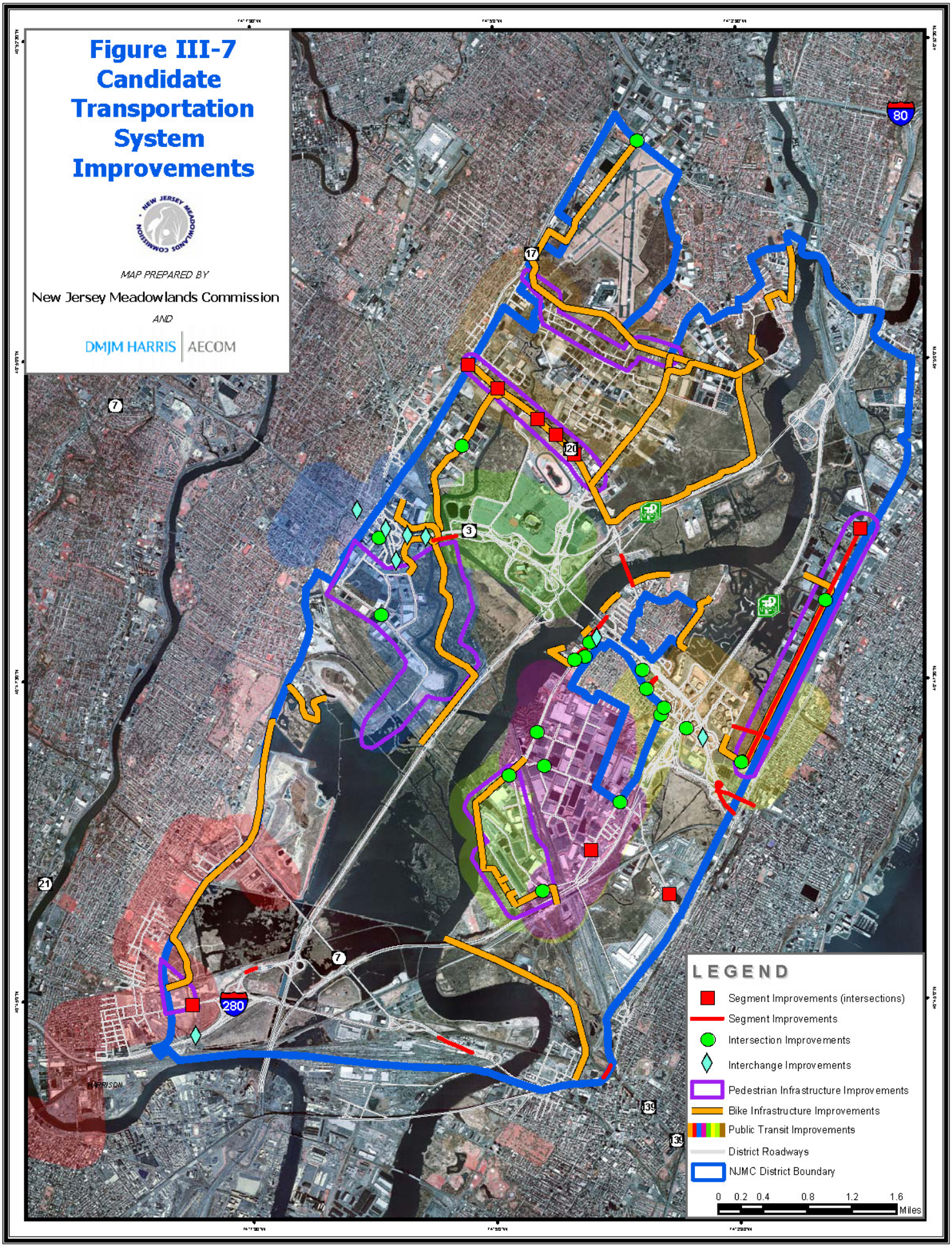


Figure III-7
Candidate Transportation System Improvements
MAP PREPARED BY
New Jersey Meadowlands Commission
AND
DMJM HARRIS | AECOM
LEGEND
Segment Improvements (intersections)
Segment Improvements
Intersection Improvements
Interchange Improvements
Pedestrian Infrastructure Improvements
Bike Infrastructure Improvements
Public Transit Improvements
District Roadways
NJMC District Boundary
0 0.2 0.4 0.8 1.2 1.6
Miles

3. Signal Integration

Major and minor arterials in the District would benefit from the installation of state-of-the–art traffic signal systems to monitor and respond to changes in traffic flow. This program would support the continuing identification of opportunities to apply new signal technology, especially for roads not in the regional travel model network, and their implementation.

4. Planning Studies

The conduct of further detailed assessment of opportunities/needs for transit (such as those identified in Chapter VIII, ranging from bus route rationalization to new rail transit services such as the extension of light rail to District locations), goods movement, bicycle, pedestrian, safety and travel demand management or land use options could be undertaken as conditions change, conducted in partnership and cost sharing with the appropriate public agency. Additionally, the NJMC will collaborate with the NJDOT, the Port Authority of New York and New Jersey, and NJTPA on a future District-wide freight analysis study to improve goods-movement capacity and mitigate potential development based increases in roadway truck traffic volumes.

5. Transportation Efficiency Credit Program

This program would fund the adoption of the various strategies to meet District objectives in encouraging land use/site design measures to encourage non-auto travel or reduced trips. The program would provide funds to offset trip or fee credits for such measures as described in Chapter VI.

6. Incident Management

Incident management can significantly reduce the congestion experienced by roadway users. This program would enable the District to join with other public agency partners to identify effective incident identification, notification, and recovery measures for District roads. Implementation and operation of identified additional measures beyond those in place would be the responsibility of the facility's respective operating agencies.

7. Traffic Counting

As with the public transit improvements, the process did not identify a separate set of improvements to meet existing pedestrian needs. The future share of the costs of the pedestrian improvements was based on the ratio of the existing Transit Score for the sub-area to the future Transit Score.

Table IV-9: Candidate Pedestrian Improvements and Cost Estimates

Ref #	Area	Number of Crosswalks	Length of Sidewalk (ft)	Total Cost	Future Share	Future Costs
P-1	Valley Brook Avenue	9	8,559	$ 601,440	52.9%	$ 318,162
P-2	Harrison Avenue	0	944	$ 66,000	37.3%	$ 24,618
P-3	Westside Avenue	15	14,542	$1,022,000	49.3%	$ 503,846
P-4	Paterson Plank Road	24	11,414	$ 806,000	26.6%	$ 214,396
P-5	New County Rd./Ext.	6	1,667	$ 576,430	43.7%	$ 251,900
P-6	Moonachie Avenue	18	1,674	$ 123,000	4.4%	$ 5,412
	TOTAL	**72**	**38,800**	**$3,194,870**		**$1,318,334**

E. BICYCLE

Chapter III also recommends several bicycle facility enhancements for the District. Each recommendation involves establishing a Class I (Off Road Path), Class II (On Road Striped Lanes), or Class III (Share the Road) bicycle route along the designated corridor. According to the 1999 standards as identified by the American Association of State Highway and Transportation Officials (AASHTO), Class I bicycle routes provide a completely separated right-of-way designated for the exclusive use of bicycles and pedestrians with cross-flows by motorists minimized. Such bike paths are usually 10 feet wide. Class II bicycle routes are made up of bike lanes that are typically 5 feet wide on the outer roadway, designated by a white paint stripe and either with painted bicycle symbols or bicycle route signs. Class III bicycle routes are located along an on-road, shared right-of-way designated by bike route signs and/or permanent markings.

Cost estimates for Class I and Class II bicycle facilities were determined by analyzing similar project costs per mile from improvements in areas surrounding the District. Project cost

information was obtained through the New Jersey Department of Transportation website. After carefully reviewing a number of similar Class I and Class II projects, it was determined that the average cost per mile for a Class I paved bicycle facility constructed in northern New Jersey would be approximately $500,000 per mile, while a Class I gravel path would cost approximately $300,000 per mile. Costs per mile for a Class II on road striped bike/travel lane would be cheaper at $125,000 per mile (striping only).

Costs for Class III bicycle route facilities include required~~require~~ signage for every 0.25 miles, at all signalized intersections, and at every turn, along with a ~~curb~~ vehicular travel lane at least 12 feet wide to accommodate both auto vehicles and bicycles in urban areas (source: AASHTO Guide for the Development of Bicycle Facilities, 1999). Bicycle route signs cost approximately $100 per sign and $20 per post (includes installation), for an approximate cost of $1,000 per mile for signs in both directions (source: planning group at the New York State Department of Transportation, ~~in~~ Region 10 [Long Island]). Table IV-10 summarizes the cost estimates for each recommendation.

As with the public transit and pedestrian improvements, the process did not identify a separate set of enhancements to meet existing bicycle facility needs. The future share of the costs of the candidate bicycle improvements is also based on the ratio of the existing Transit Score for the sub-area to the future Transit Score.

Table IV-10: Candidate Bicycle Improvements and Cost Estimates

Ref #	Improvement Area	Route Milage	Estimated Cost	Future Share	Estimated Future Cost
B-1	Carlstadt	6.1	$ 728,100	9.7%	$70,626
B-2	East Rutherford	1.6	$ 287,500	71.7%	$206,138
B-3	Jersey City	1.1	$ 207,500	0.0%	$0
B-4	Kearny	1.8	$ 540,000	68.4%	$369,360
B-5	Little Ferry	1.2	$ 190,100	4.9%	$9,315
B-6	Lyndhurst	1.0	$ 195,000	98.8%	$192,660
B-7	Moonachie	3.0	$ 89,800	0.0%	$0
B-8	North Arlington	1.8	$ 540,000	23.2%	$125,280
B-9	North Bergen	2.1	$ 937,500	49.3%	$462,188
B-10	Rutherford	2.8	$ 925,000	34.2%	$316,350
B-11	Secaucus	5.5	$ 946,800	21.4%	$202,615
B-12	South Hackensack	0.4	$ 102,500	0.0%	$0
B-13	Teterboro	1.7	$ 212,500	13.8%	$29,325
	TOTAL	**30.1**	**$ 5,902,300**		**$1,963,883**

F. DISTRICT-WIDE PROGRAMS

The cost to conduct these programs is estimated per activity or on an annual recurring cost basis as outlined in Table IV-11. Each program is related to future, not existing, needs and issues.

Table IV-11: District-wide Program Cost Estimates

Ref #	Program	Cost Basis Unit	Cost Per Unit	Number of Units	Estimated Future Cost
D-1	Traffic Signal Timing	10 Intersections per year	$ 3,000	24 years	$ 720,000
D-2	Development Intersections and Signals	Access locations	various	20	$ 5,196,000
D-3	Signal Integration Program	Intersection	$ 98,000	15	$ 1,470,000
D-4	Planning Studies (transit, goods movement, bike/pedestrian, safety strategies)	Annual	$ 250,000	24 years	$ 6,000,000
D-5	Transportation Efficiency Credit Program	Percent of Private share of projects	N/A	15%	$ 3,283,982
D-6	Incident Management	Initiative	$ 500,000	5	$ 2,500,000
D-7	Traffic Count Program	20 Counts per year	$ 2,500	24 years	$ 1,200,000
D-8	Transportation Model Updates	Update	$ 120,000	6	$ 720,000
D-9	Program Administration	Annual	$ 150,000	24	$ 3,600,000
	TOTAL				**$ 24,689,982**

IV. ESTIMATED COSTS OF CANDIDATE IMPROVEMENTS

A. INTRODUCTION

This chapter presents cost estimates for the candidate transportation improvements described in Chapter III. These estimates include the costs to develop, design, and construct each improvement. They also identify the percentage and amount of the improvement attributable to existing development versus future new development, which determines which costs could be subject to the fee assessment process as presented in Chapter VI. These estimates also include costs for the District programs, planning, and administration. As Table IV-1 shows, over $280 million could be subject to fee assessment.

Table IV-1: Estimated Costs of Candidate Transportation Improvements

	Total Costs	Future Costs
Public Transit	$ 41,200,000	$ 15,701,000
Roads	$ 398,455,600	$ 235,706,095
Pedestrian	$ 3,194,870	$ 1,318,334
Bicycle	$ 5,842,659	$ 1,963,883
District-wide Programs	$ 24,688,412	$ 24,688,412
TOTAL PROGRAM COSTS	**$473,381,541**	**$279,377,724**

The following sections describe the estimated costs for the candidate improvements for public transit, roadways, pedestrians, and bicycles. Appendix IV provides a list of all candidate improvements, their cost estimates, and a detailed description of the cost estimating methodology, including how costs were allocated to existing and future development needs.

B. PUBLIC TRANSIT

Chapter III proposed six new shuttle services for the District. These shuttles would serve the sub-areas of Kearny, Secaucus (three routes), Lyndhurst/Rutherford, and Carlstadt/Moonachie. The costs to establish and operate these services include operating, fleet acquisition, and facilities costs. The cost estimates cover a 24-year period, with the average lifespan of a 20 to 22 passenger shuttle bus being 3 years. Table IV-2 summarizes the costs for each candidate service.

Table V-1: Evaluation Summary

Category	Multi-Modal	District Benefit	Cost Effective	Recommended
Transit	**Yes**	**Yes**	**Yes**	**x**
Pedestrian	**Yes**	**Yes**	**Yes**	**x**
Bicycle	**Yes**	**Yes**	**Yes**	**x**
Links (a)	-	No	No	-
Links (b)	-	Yes	No	-
Links (c)	-	No	Yes	-
Links (d)	-	**Yes**	**Yes**	**x**
Interchanges	-	Yes	No	-
Intersections	-	**Yes**	**Yes**	**x**

This review process led to identifying a smaller set of recommended transportation improvements that will be the basis for the Plan (see Figure V-1). In general, these improvements include all candidate intersection, public transit, pedestrian, and bicycle projects (candidate segment or interchange improvements are not included). The total estimated costs of all recommended improvements are $95.44.3 million, and the total costs of improvements attributable to future development are $63.16 million (see Table V-2).

Table V-2: Estimated Costs of Recommended Transportation Improvements

	Total Costs	Future Costs
Public Transit	$ 41,200,000	$ 15,701,000
Roads	$ 20,405,600	$ 19,450,095
Pedestrian	$ 3,194,870	$ 1,318,334
Bicycle	$ 5,902,300	$ 1,983,856
District-wide Programs	$ 24,689,982	$ 24,689,982
TOTAL PROGRAM COSTS	**$ 95,392,752**	**$ 63,143,267**

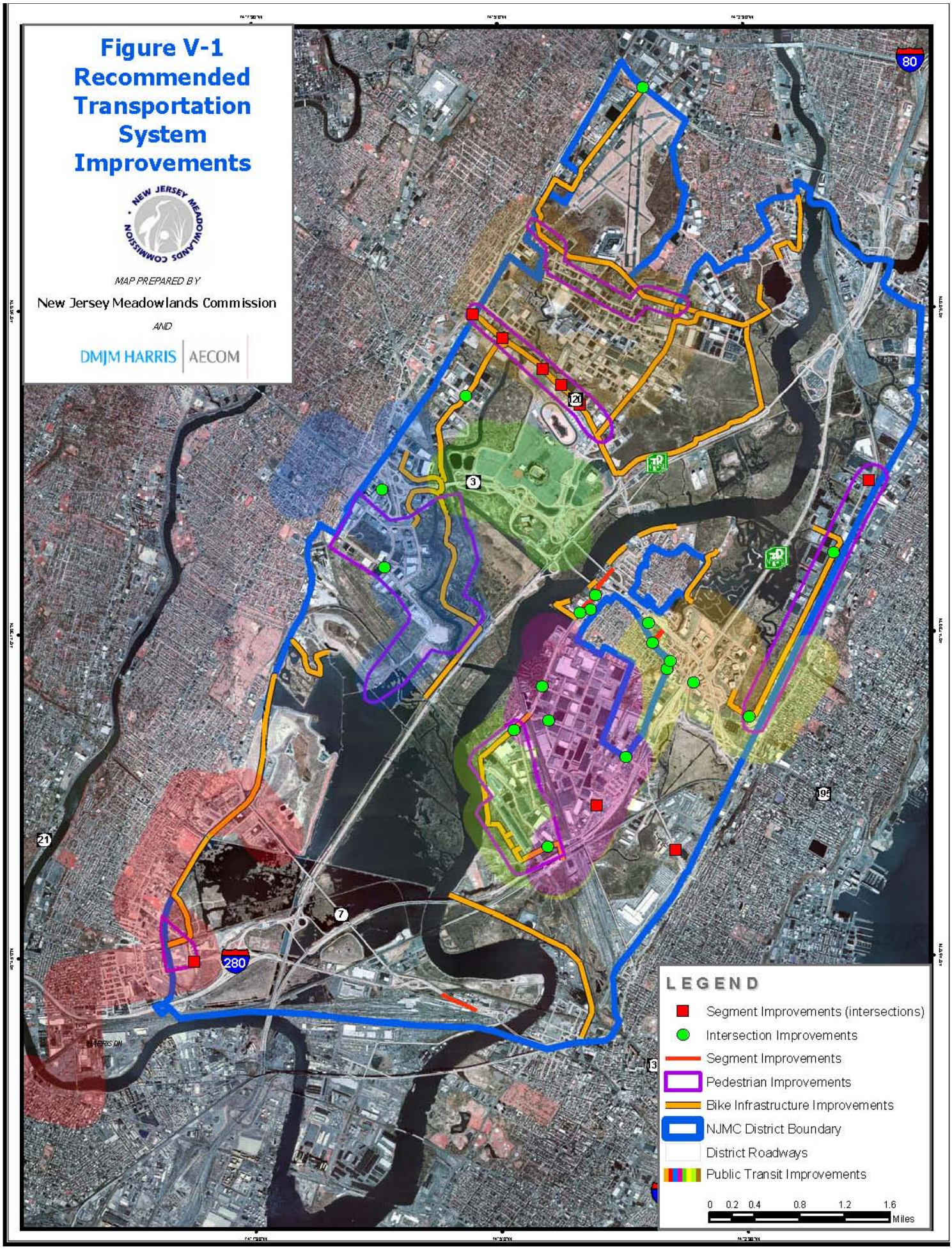


Figure V-1
Recommended
Transportation
System
Improvements
MAP PREPARED BY
New Jersey Meadowlands Commission
AND
DMJM HARRIS | AECOM
LEGEND
Segment Improvements (intersections)
Intersection Improvements
Segment Improvements
Pedestrian Improvements
Bike Infrastructure Improvements
NJMC District Boundary
District Roadways
Public Transit Improvements
0 0.2 0.4 0.8 1.2 1.6
Miles
80
21
3
7
280
95

to all candidate public transit, pedestrian, and bicycle improvements. The rating system for the roadway improvements is based on two factors: the severity of the future problem and the functional classification of the roadway. The highest ratings went to the most severe problems (based upon V/C ratio or delay) and the highest functional classifications (freeways and principal arterials). The rating process assigned improvements with the highest ratings to the earliest stages. Appendix V provides more details on the rating process.

The staging schedule identifies that one complex roadway improvement that will extend over two stages (10 years), with a sequential duration of 7-10 years. This project may include as many as seven distinct phases of development: concept development, feasibility assessment, alternatives analysis, design, permitting, bidding, and construction. It is anticipated that less complex roadway improvements (along with transit shuttles and pedestrian and bicycle enhancements) will not require extensive concept development, feasibility assessment, or alternatives analysis and thus should occur within a single 5-year stage, with costs being distributed over all stages. The improvement staging schedule will be reassessed and revised to reflect the availability of District revenues from development fee assessments over the stages. These changes will be presented in Chapter VI.

Table V-5: Staging Plan for Identified Improvements

Ref #	Improvement	Description	Stage I	Stage II	Stage III	Stage IV	Stage V
	Stage I						
I-13	Paterson Plank Road & 1st Street	Signal phasing and split timing improvement & turning movement storage lane additions	x				
I-17	New County Road & Castle Road	Intersection signalization	x				
I-18	Polito Avenue & Rutherford Avenue	Signal split timing improvement & turning movement storage lane additions	x				
T-1	Kearny area	Shuttle bus service	x	x	x	x	x
T-2	Lyndhurst/Rutherford area	Shuttle bus service	x	x	x	x	x
T-3, 4 & 5	Secaucus area	Shuttle bus service	x	x	x	x	x
T-6	Carlstadt/Moonachie area	Shuttle bus service	x	x	x	x	x
P-1	Valley Brook Avenue area	Pedestrian improvements	x				
P-2	Harrison Avenue area	Pedestrian improvements	x				
P-3	Westside Avenue	Pedestrian improvements	x				
P-4	Paterson Plank Road	Pedestrian improvements	x				
P-5	New County Road/New County Road Extension area	Pedestrian improvements	x				
P-6	Moonachie Avenue and vicinity	Pedestrian improvements	x				
B-1	Carlstadt	Bicycle route	x	x			
B-2	East Rutherford	Bicycle route	x	x			
B-3	Jersey City	Bicycle route	x	x			
B-4	Kearny	Bicycle route	x	x			
B-5	Little Ferry	Bicycle route	x	x			

Ref #	Improvement	Description	Stage I	Stage II	Stage III	Stage IV	Stage V
B-6	Lyndhurst	Bicycle route	x	x			
	Stage I						
B-7	Moonachie	Bicycle route	x				
B-8	North Arlington	Bicycle route	x				
B-9	North Bergen	Bicycle route	x	x			
B-10	Rutherford	Bicycle route	x				
B-11	Secaucus	Bicycle route	x				
B-12	South Hackensack	Bicycle route	x				
B-13	Teterboro	Bicycle route	x				
	Stage II						
I-1	NJ 46 & Industrial Avenue	Signal cycle and split timing improvement & turning movement storage lane additions		x			
I-3	Westside Avenue & Paterson Plank Road	Grade separation		x	x		
I-4	Murray Hill Parkway & E. Union Avenue	Intersection signalization and storage lanes		x			
I-11	Meadowland Parkway & Harmon Plaza	Signal split timing improvement & turning movement storage lanes		x			
I-16	Meadowlands Parkway & Seaview Drive	Storage lanes		x			
	Stage III						
L-11	County Ave. btw Metro Way and Jefferson Ave.	Intersection improvement			x		
L-12	Secaucus Rd. btw US 1&9 and Postal Service Rd.	Intersection improvement			x		
L-16	NJ 7 west of Wittpenn Bridge	Metering of westbound traffic on to bridge			x		
I-9	County Avenue & Paterson Plank Road	Turning movement storage lanes			x		
I-14	American Way & Meadowland Pkwy	Storage lanes			x		
I-20	Meadowland Parkway & eastbound NJ 3 ramp	Signal split timing improvement & turning movement storage lanes			x		

VI. COST ALLOCATION AND FEE ASSESSMENT

A. FEE ASSESSMENT FRAMEWORK

This chapter describes the process for allocating transportation improvement costs among public and private responsibilities and presents a formula to calculate fees that will be assessed on District growth. The type and number of vehicle trips generated by development determines the cost allocation.

The process used to complete the cost allocation and non-exempt development assessment fee framework includes the following:

- Methodology for allocating costs of projects to public and private shares
- Adjustments and impacts to assessments based on exemptions
- Methodology for assessing private share costs among new developments
- Formula for calculating costs per vehicle mile traveled
- Calculation of specific fees for development projects
- Adjustments and impacts to assessments based on credits.

The proposed formula takes into account the effect of vehicle trips originating within the ~~NJMC~~ District on all multi-modal improvements. It accounts for the impacts of various lengths of trips generated by future private development on the need for transportation improvements at the aggregate level of the total transportation system throughout the District.

Basing the impact fee on new growth trips makes it possible to create a much better fair-share fee system. The cost is based on the anticipated use of the improvements by all new trips. The cost allocation method enables the collection of fees from developers whose developments use District roads and transportation services that need improvements.

The following sections describe the steps in this process.

- Low- and moderate-income housing units as defined in the Act
- Developments that were issued a zoning certificate prior to the adoption of the fee assessment resolution
- Any development that has an approved development agreement with the governing State agency or municipality within the district having primary jurisdiction over the development or for which construction of a material portion of the development has commenced after the date on which a development agreement was executed

The majority of m~~M~~andated exemptions, unlike credits or the discretionary exemptions, become the responsibility of the individual developments and/or public sector ~~and must be addressed with public funding sources~~. The NJMC reviewed anticipated future development and redevelopment locations, expected uses, and square footages to determine which properties in the District, with their corresponding trip generation, would be exempt from the fee assessment process. The NJMC has identified fifteen development proposals (including mandated exemptions and other proposals not subject to NJMC jurisdiction) that meet ~~this criteria~~these criteria. These development proposals are listed in Appendix VII.

b. De Minimis Exemptions

The enabling legislation also provides for fee exemption or fee reduction when the NJMC determines that a specified land use will have a beneficial, neutral, or minor adverse impact on transportation. Since, by definition, such uses would not affect the total number of trips generated in the District, such exemptions do not affect the allocation of total future costs and assessments. Land uses that do not create an impact on facilities and services, or that are deemed de minimis, include the following:

1. Alteration or expansion of an existing structure that does not add any residential units
2. Alteration or expansion of nonresidential structures that do not expand the gross floor area by more than 100 square feet
3. Miscellaneous improvements, including, but not limited to, fences, walls, signs, and residential swimming pools
4. Demolition or removal of a structure

The result is that $38.241.1 million, of the total future costs of $63.166 million, will be subject to fee assessment attributable to non-exempt development and redevelopment. (see Table VI-3)

Table VI-3: Calculation of Total Private Share

Ref	Improvement	Future Cost	Private Share Proportion	Private Share Cost
T-1	Kearny area shuttle	$ 5,133,200	0.8850	$ 4,542,882
T-2	Lyndhurst / Rutherford area shuttle	$ 3,788,400	0.5429	$ 2,056,722
T-3	Secaucus Transit Village area shuttle	$ 1,272,600	1.0000	$ 1,272,600
T-4	Secaucus area shuttle	$ 2,484,600	0.6896	$ 1,713,380
T-5	Secaucus - North Bergen shuttle	$ 2,484,600	0.8703	$ 2,162,347
T-6	Carlstadt -Moonachie area shuttle	$ 537,600	1.0000	$ 537,600
L	Road Links	$ 5,707,995	0.3998	$ 2,282,056
I	Road Intersections	$ 13,742,100	0.3998	$ 5,494,092
P	Pedestrian	$ 1,318,334	0.5245	$ 691,466
B	Bicycle	$ 1,983,856	0.5752	$ 1,140,070
D	D-1, D-3, D-4, D-5, & D-6	$ 13,973,982	0.3998	$ 5,586,798
D	D-2, D-7, D-8, & D-9	$ 10,716,000	1.0000	$ 10,716,000
	TOTAL	**$ 63,143,267**		**$ 38,196,014**

The remaining $24.98 million of future improvement costs and all of the $32.228.3 million of improvement costs determined to be attributable to existing deficiencies (total $57.223.2 million) will be the public share cost of future improvements (see Table VI-2). This public share will be the funding responsibility of other agencies including the NJDOT, NJ TRANSIT, Hudson and Bergen Counties, and District municipalities.

Under the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) requirements, a state's annual list of projects must include investments made in pedestrian walkways and bicycle transportation facilities. As a result, these types of projects are being emphasized by regional, state, and national transportation agencies (e.g. NJTPA, NJDOT, and USDOT). As such, NJMC may pursue project funding through NJDOT and NJTPA.

Table VI-4: Summary of Allocation of Public and Private Costs

Breakdown of Recommended Improvement Costs		
A	Existing development	$ 32,249,486
B	Future public	$ 24,947,253
	Total Public Share (A + B)	**$ 57,196,738**
C	Future private	$ 38,196,014
	Total estimated (A + B + C)	**$ 95,392,752**

5. Establish Private Share Fee Rate

The next step in the assessment framework is to determine a private share fee rate for traffic generated by new development. The NJMC will assess a fee based upon the total future private share of improvements ($38.241.1 million) divided by the total morning and evening peak hour vehicle miles of travel generated by non-exempt development and net redevelopment. That is, the future development and redevelopment trips generated by each land use type are multiplied by a trip length factor, derived in the next section, to determine the vehicle miles of travel associated with each development. Table VI-5 summarizes the calculation of total peak hour vehicle miles traveled subject to fee.

Table VI-5: Calculation of Peak Hour VMT Subject to Fee

Land Use	2030 Net Growth		Peak Trips	x VMT Factor	= Total VMT
Warehouse	3,989,000	sf	3,123	7.25	22,642
Office	1,670,000	sf	4,779	5.92	28,292
Retail	4,096,000	sf	9,200	4.98	45,816
Specialty Retail	640,000	sf	4,641	4.98	23,112
Hotel	1,016	room	1,138	3.73	4,245
Condo	2,409	unit	1,722	6.22	10,711
				Total Peak Hour VMT subject to Fee	**134,818**

Table VI-6 summarizes the calculation of the per vehicle mile of travel fee. Based upon this calculation, the Plan proposes to establish a one-time fee of $283.32305.17 per peak hour vehicle mile of travel (VMT).

Table VI-6: Calculation of Fee per Vehicle Mile

A	Total Estimated Future Private Share Cost of Improvements	$ 38,196,014
B	Total Peak Hour VMT subject to Fee	134,818
	Fee per VMT (A / B)	**$ 283.32**

6. Assess Developer Fees

The fees assessed to development in the District will be based on the peak hour trip generation formulae developed by the Institute of Transportation Engineers (ITE) for applicable land uses as described in the NJMC implementing resolution and subsequent regulations. These rates will be consistent with the land use types and rates applied in the modeled trip generation.

To calculate the fee to assess to a specific development, the NJMC will determine the appropriate ITE trip generation category(ies) for the proposed development project. The total number of units or square footage, as applicable, will be used in the A.M. and P.M. peak hour trip generation formulae for the identified land use to determine the total number of peak hour trips for each development. Total existing, pass-by, diverted, and internal trips will be reduced from the trip generation total in accordance with applicable ITE standards as stated in the latest version of the ITE Trip Generation Handbook. The total trips for the development are then multiplied by the appropriate land use average trip length factor and the fee rate to produce the fee obligation for the development. The following is a summarization detailing the derivation of trip length factors for individual land uses within the District.

Using data derived from the model, the average trip length for new future trips in the District is calculated in Table VI-7 below.

Table VI-10 provides examples of trip generation and fee calculations for several major land use types, based upon applying the trip generation formulae, trip length factors, and fee rate.

Table VI-10: Examples of Fees for Major Land Use Types

Land Use	ITE Land Use Code	Size	Peak Trips	VMT Factor	VMT	VMT Rate	Total Fee
Warehouse	150	100,000 sf	148	7.25	1,073	$ 283.32	$304,002
Residential	230 (Condo / Townhouse)	100 du	112	6.22	697	$ 283.32	$197,474
Office	710 (General Office)	100,000 sf	378	5.92	2,238	$ 283.32	$634,070
Retail	820 (Shopping Center)	100,000 sf	463	4.98	2,306	$ 283.32	$653,336

The NJMC implementing resolution and subsequent regulations will provide a procedure for review and appeal of assessed fees. The fee assessment formula and fee rate calculation will require periodic updating as both transportation and development conditions change over time. On an annual basis, the Consumer Price Index for the Northeast Urban Series will be used each February to modify fee rates across the board, applying the Index change released January of the same year. In addition, the completion of transportation improvements will identify cost differentials from those estimated for the initial concepts identified in this first MDTP. Levels, types, and locations of future development within the District will also evolve. Future Plan updates will include a review of the parameters, but the NJMC may need to reset certain selective elements on an interim basis between each Plan update.

B. APPLICATION OF CREDITS

Two types of credits may be applied against developer fee assessment payments.

1. Credits for construction or right-of-way contribution

If a developer has directly constructed elements of the transportation plan or has provided contributions to off-site right-of-way to support plan elements, the developer may apply for credit in lieu of the required fee.

2. Transportation Efficiency Credits for completing development elements consistent with the objectives of the HMTPD Act.

The developer may receive a credit against the required developer fee assessment payments if the following three statements are true:

a. The Applicant applies for the credit at or in advance of zoning certificate approval for the development.
b. Elements ***that are not otherwise required through regulations or the zoning certificate review process***.
c. The NJMC has deemed these elements to be consistent with transportation-efficient land uses that reduce automobile dependency, improve pedestrian and bicyclist safety, and encourage alternatives to peak-hour automobile trips.

The goal of the Transportation Efficiency Credit Program is to promote and encourage transportation-efficient land uses, thereby reducing automobile usage. These improvement elements would reduce the number of single-occupancy vehicle trips, thereby lessening the need for additional transportation improvements. For this reason, the trip credits are not included as a reduction of private trips in the fee assessment equation. Instead, they are apportioned between public and private shares as a transportation improvement included in the overall improvement program. The plan includes $3.34.5 million (2007) for this program. The rationale for the discounts is that such developments and programs reduce trips and thus the impact of those trips on the regional road network. The total discount will be apportioned at an average rate of $136,800187,500 per year, with unused allocations added to subsequent years' discounts to fund future eligible projects. Table VI-10 lists the projects and programs that the NJMC will consider for eligibility for a Transportation Efficiency Credit.

Table VII-1: Financial Plan for Recommended Improvements – Staging Plan

Ref #	Improvement	Total Costs	Public Share	Private Share	Potential Funding Partner	Stage I	Stage II	Stage III	Stage IV	Stage V
	Public Transit									
T-1	Kearny Area	$8,200,000	$3,657,118	$4,542,882	Participating Businesses		$1,195,495	$1,195,495	$1,195,495	$956,396
T-2	Lyndhurst / Rutherford Area	$8,200,000	$6,143,278	$2,056,722	Participating Businesses		$541,243	$541,243	$541,243	$432,994
T-3	Secaucus Transit Village Area	$4,200,000	$2,927,400	$1,272,600	Participating Businesses		$334,895	$334,895	$334,895	$267,916
T-4	Secaucus Area	$8,200,000	$6,486,620	$1,713,380	Participating Businesses	$356,954	$356,954	$356,954	$356,954	$285,563
T-5	Secaucus / North Bergen Area	$8,200,000	$6,037,653	$2,162,347	Participating Businesses		$569,039	$569,039	$569,039	$455,231
T-6	Carlstadt / Moonachie Area	$4,200,000	$3,662,400	$537,600	Participating Businesses		$141,474	$141,474	$141,474	$113,179
	Road Segments									
L-1	Bergen Ave. & Newark - Jersey City Turnpike	$100,000	$78,811	$21,189	Hudson County		$21,189			
L-6	Route 120 corridor	$400,000	$240,080	$159,920	NJDOT	$159,920				
L-9	Plaza Center	$13,500	$11,503	$1,997	Secaucus		$1,997			
L-10	Meadowlands Parkway	$1,950,000	$1,170,390	$779,610	Hudson County					$779,610
L-11	County Ave. btw Metro Way and Jefferson Ave.	$200,000	$120,040	$79,960	Hudson County				$79,960	
L-12	Secaucus Rd. btw US 1&9 and Postal Service Rd.	$200,000	$60,020	$39,980	Hudson County				$39,980	
L-15	Westside Avenue and 83rd Street	$900,000	$540,180	$359,820	North Bergen					$359,820
L-16	Route 7 Metering	$3,000,000	$2,160,420	$839,580	NJDOT	$839,580				

Table VII-1: Financial Plan for Recommended Improvements – Staging Plan (continued)

Ref #	Improvement	Total Costs	Public Share	Private Share	Potential Funding Partner	Stage I	Stage II	Stage III	Stage IV	Stage V
	Road Intersections									
I-1	NJ 46 & Industrial Avenue	$712,000	$427,342	$284,658	NJDOT	$284,658				
I-2	Westside Avenue & 69th Street	$3,000	$1,801	$1,199	North Bergen		$1,199			
I-3	Westside Avenue & Paterson Plank Road	$4,032,000	$2,420,006	$1,611,994	Hudson County				$370,759	$1,241,235
I-4	Murray Hill Pkwy & East Union Avenue	$498,000	$298,900	$199,100	East Rutherford		$199,100			
I-5	Paterson Plank Road & Harmon Meadow Blvd.	$605,000	$363,121	$241,879	Hudson County				$241,879	
I-6	County Avenue & Secaucus Road	$801,600	$481,120	$320,480	Hudson County				$320,480	
I-7	County Avenue & Center Avenue	$85,500	$51,317	$34,183	Hudson County				$34,183	
I-8	County Avenue & Paterson Plank Road	$1,046,000	$627,809	$418,191	Hudson County				$418,191	
I-9	Paterson Plank Road & Humboldt Street	$248,000	$148,850	$99,150	Secaucus					$99,150
I-10	Meadowland Parkway & Harmon Plaza	$629,000	$377,526	$251,474	Secaucus					$251,474
I-11	Center Street & 10th Street	$3,000	$1,801	$1,199	Secaucus			$1,199		
I-12	Paterson Plank Road & 1st Street	$376,000	$225,675	$150,325	Hudson County	$150,325				
I-13	American Way & Meadowland Parkway	$1,280,000	$768,256	$511,744	Secaucus				$511,744	
I-14	Secaucus Road & Hartz Way	$256,000	$153,651	$102,349	Secaucus				$102,349	
I-15	Meadowland Parkway & Seaview Drive	$768,000	$460,954	$307,046	Secaucus	$307,046				
I-16	New County Road & Castle Road	$250,000	$150,050	$99,950	Hudson County	$99,950				
I-17	Polito Avenue & Rutherford Avenue	$640,000	$384,128	$255,872	NJDOT	$255,872				
I-18	Valley Brook Avenue & Clay Avenue	$250,000	$150,050	$99,950	Lyndhurst				$99,950	
I-19	Meadowland Parkway & Eastbound NJ 3 Ramp	$1,259,000	$755,652	$503,348	NJDOT					$503,348

Table VII-1: Financial Plan for Recommended Improvements – Staging Plan (continued)

Ref #	Improvement	Total Costs	Public Share	Private Share	Potential Funding Partner	Stage I	Stage II	Stage III	Stage IV	Stage V
	Pedestrian									
P-1	Valley Brook Avenue Area	$601,440	$434,564	$166,876	Lyndhurst	$166,876				
P-2	Harrison Avenue Area	$66,000	$53,088	$12,912	Hudson County	$12,912				
P-3	Westside Avenue	$1,022,000	$757,733	$264,267	North Bergen	$264,267				
P-4	Paterson Plank Road	$806,000	$693,549	$112,451	NJDOT	$112,451				
P-5	New County Road/New County Road Extension	$576,430	$444,308	$132,122	Hudson County	$132,122				
P-6	Moonachie Avenue Area	$123,000	$120,161	$2,839	Bergen County	$2,839				
	Bicycle									
B-1	Carlstadt Area	$728,100	$728,054	$46	Carlstadt	$46				
B-2	East Rutherford Area	$287,500	$188,913	$98,588	East Rutherford	$98,588				
B-3	Jersey City Area	$207,500	$207,500	$0	Jersey City	$0				
B-4	Kearny Area	$540,000	$213,116	$326,884	Kearny	$326,884				
B-5	Little Ferry Area	$190,100	$186,781	$3,319	Little Ferry	$3,319				
B-6	Lyndhurst Area	$195,000	$157,320	$37,680	Lyndhurst	$37,680				
B-7	Moonachie Area	$89,800	$89,800	$0	Moonachie	$0				
B-8	North Arlington Area	$540,000	$429,127	$110,873	North Arlington	$110,873				
B-9	North Bergen Area	$937,500	$493,800	$443,700	North Bergen	$399,330	$44,370			
B-10	Rutherford Area	$925,000	$903,262	$21,738	Rutherford	$21,738				
B-11	Secaucus Area	$946,800	$878,882	$67,918	Secaucus	$67,918				
B-12	South Hackensack Area	$102,500	$102,500	$0	South Hackensack	$0				
B-13	Teterboro Area	$212,500	$183,175	$29,325	Teterboro	$29,325				

Table VII-1: Financial Plan for Recommended Improvements – Staging Plan (continued)

Ref #	Improvement	Total Costs	Public Share	Private Share	Potential Funding Partner	Stage I	Stage II	Stage III	Stage IV	Stage V
	District-wide Programs									
D-1	Traffic Signal Timing	$720,000	$432,144	$287,856		$59,970	$59,970	$59,970	$59,970	$47,976
D-2	New intersections / signals	$5,196,000	$0	$5,196,000		$1,082,500	$1,082,500	$1,082,500	$1,082,500	$866,000
D-3	Signal Integration Program	$1,470,000	$882,294	$587,706		$122,439	$122,439	$122,439	$122,439	$97,951
D-4	Planning Studies	$6,000,000	$3,601,200	$2,398,800	Various	$499,750	$499,750	$499,750	$499,750	$399,800
D-5	Credit Fund	$3,283,982	$1,971,046	$1,312,936		$273,528	$273,528	$273,528	$273,528	$218,823
D-6	Incident Management	$2,500,000	$1,500,500	$999,500		$208,229	$208,229	$208,229	$208,229	$166,583
D-7	Traffic Count Program	$1,200,000	$0	$1,200,000		$250,000	$250,000	$250,000	$250,000	$200,000
D-8	Transportation Model Updates	$720,000	$0	$720,000		$150,000	$150,000	$150,000	$150,000	$120,000
D-9	Program Administration	$3,600,000	$0	$3,600,000	NJMC	$750,000	$750,000	$750,000	$750,000	$600,000
	Total Costs	**$95,392,752**	**$57,196,738**	**$38,196,014**		**$7,637,888**	**$6,803,372**	**$6,536,715**	**$8,754,989**	**$8,463,050**

	Program Budget Summary					
	Previous Balance	$0	$1,315	$837,146	$1,939,634	$823,848
	Current Stage Revenue	$7,639,203	$7,639,203	$7,639,203	$7,639,203	$7,639,203
	Total Stage Revenue	$7,639,203	$7,640,518	$8,476,349	$9,578,837	$8,463,050
	Stage Expenditure	$7,637,888	$6,803,372	$6,536,715	$8,754,989	$8,463,050
	Balance Forward	$1,315	$837,146	$1,939,634	$823,848	$0

VIII. FUTURE PLAN ELEMENTS

A. INTRODUCTION

Chapters III and V detail the methodology for identifying the recommended transportation improvements in the Plan. This chapter identifies and recommends several additional planning and policy initiatives that may warrant further study in the future. Although the following strategies have the potential to improve transportation conditions in the District, they did not meet the criteria for advancement and funding through the fee framework, as outlined in Chapters III and V. The NJMC may revisit these strategies for potential inclusion in future TPD plans.

B. PUBLIC TRANSIT

1. Background

In addition to the committed projects identified in Chapter III and recommended projects identified in Chapter V, the NJMC's *Meadowlands Mobility 2030* report proposes several transit improvements for the District and the surrounding area. These projects are generally regional in nature and include rail, park-and-ride (P-R), and bus priority lane proposals, as well as enhancements to bus service (see Table VIII-1).

These projects can be grouped into two timelines of planned development: mid-range and long-term. Mid-range transit projects typically take two to four years to implement. Generally, they involve infrastructure upgrades and can be more costly to implement than short-term improvements. The following are examples of mid-range strategies that are being considered to create more efficient and functional bus routes within the District ~~are~~:

- The implementation of bus priority routes on bus lines that are currently not running on time.
- The installation of bus-only lanes on routes where automobile traffic severely hinders bus travel.
- The installation of bus priority signaling along routes where traffic signal timings impede the flow of traffic and adversely affect bus running times.
- The implementation of new park-and-ride facilities to provide additional multi-modal transit options for District transit users.

2. Potential Future Pedestrian and Bicycle Strategies

Potential future pedestrian and bicycle strategies include the following:

a. An investigation examining potential locations and types of bicycle/pedestrian linkages needed within the District and in surrounding areas and a methodology to determine where and how to implement them.

b. Ensure that the planning for new roads, road widening, bridge replacements, and intersection upgrades includes a feasibility study for incorporating pedestrian and bicycle improvements into design and construction.

c. Investigate the potential application of other measures to improve pedestrian and bicycle access and safety within the District. These measures may include traffic calming, streetscaping, and revised signal timing. The proposed MDTP contains funding to support this collaborative work.

d. Investigate the potential for upgraded bicycle facilities within new transit-oriented developments inside the District. Upgraded facilities can include newly designated bicycle lanes on existing roadways, bicycle storage facilities at new and existing developments, improved bicycle facilities at transit stations, and more clearly defined signage at existing bicycle facilities.

D. TRAVEL DEMAND MANAGEMENT

1. Background

Travel demand management (TDM) refers to various strategies to reduce the number of vehicles on the road. TDM strategies rely on behavioral change to alter travel choices. Such strategies include ridematching for carpooling and vanpooling, telecommuting, parking management, and providing commuter information. On the statewide level, through NJDOT's Smart Moves for Business Program, participating companies can receive a credit for their state corporate taxes by administering an employee transportation program.

The NJDOT provides funding to several regional Transportation Management Associations (TMAs), which also receive financial support from member businesses. The primary TMA serving the Meadowlands District is Meadowlink Commuter Services (Meadowlink), located in Rutherford. Meadowlink is a non-profit corporation established to promote, educate, and

Moving freight in northern New Jersey can be difficult. The tremendous influx of goods, coupled with the region's location within one of the largest consumer markets in the world, only intensifies the need to accommodate freight and goods movement in the northern New Jersey region. However, while northern New Jersey is poised to reap tremendous economic benefits by providing freight and logistics services, the region also faces serious challenges, many of which are unique. This highly developed geographic area now serves as the gateway to America for about 71 million tons of freight entering through Port Newark/Elizabeth, while another 10 million tons leave the country through the Port. Freight movement already strains the congested transportation network that must carry it.

Furthermore, goods movement in all modes (ship, rail, and truck) is projected to increase substantially in the future. The plans of all the major transportation agencies in the region – the NJDOT, Port Authority of New York and New Jersey, North Jersey Transportation Planning Authority, NJ Turnpike – call for improved, expanded, and new facilities to support this activity (e.g., Comprehensive Port Improvement Plan and Strategic Plan (Port Authority of New York and New Jersey~~),~~) and Freight System Performance Assessment Study (NJTPA), available online at http://www.njtpa.org/Plan/LRP/Freight_study/fr_study_final_rpts.aspx.). The goods that move through the District are generated by regional economic activity as well as local needs and ~~,~~ intermodal freight flows to and from other destinations, across the country, and around the world. Increased imports from China, India, and South America have forced the Port Authority to dredge its channels to make way for mega-ships that are expected to increase freight flow through the Port by as much as 65%. At the same time, the amount of freight that is moving by truck and rail from the West Coast is increasing, and will expand considerably as larger ships are unable to pass through the Panama Canal.

Existing and proposed goods movement facilities and flows directly affect how the District's transportation system functions. This impact is most evident along the US 1&9 (Tonnelle Avenue) corridor, which parallels rail freight lines that are the southern and eastern boundaries of the District. Rail lines that service the District are owned by Conrail Shared Assets; CSX; the New York, Susquehanna, & Western; and Norfolk Southern. Several rail freight yards are located in the District, including the following: